

REMARKS

Claims 1-8 are pending. By this Amendment, Claims 1-6 are amended and Claims 7-8 added. Support for the amendments and newly claimed subject matter is located in the originally filed application, such as, for example only, in drawing Figures 1A-7. Therefore, Applicants respectfully submit no new material is presented herein.

Claims 1-4 are rejected under 35 USC §102(b) as being anticipated by U.S. Patent No. 4,000,392 to Banas et al. (hereinafter "Banas"). Claims 5-6 are rejected under 35 U.S.C. §103(a) as being unpatentable over Banas, and further in view of U.S. Patent Application Publication No. 2004/0200813 to Alips et al. (hereinafter "Alips"). Applicants respectfully traverse both rejections for the following reasons.

Claim 1 recites a through weld method using high energy beams, the method including the steps of positioning a first aluminum or aluminum alloy welding base metal opposite a source of the energy beams, the first welding base metal having a first surface and a second surface opposite the first surface; disposing a second aluminum or aluminum alloy welding base metal beneath the first welding base metal, the second welding base metal having a first surface and a second surface opposite the first surface, wherein the second surface of the first welding base material abuts a first surface of the second welding base metal; and supplying a shield gas to form an ambience over a submerged-scar projecting from a welding site defined on the second surface of the second welding base metal, as well as the shield gas to push a scar projection from the welding site on the second surface of the second welding base metal, wherein a vertical height of a submerged scar is reduced.

The invention recited by Claim 1 applies a pressure of the flowing gas to push up a weld pool so that beads do not come down therefrom and so that a rather flat submerged-scar is kept, and that the post production step of removing the projection of the beads is rendered unnecessary or is rarely required. Also, there is no need to refill the welding metal to the molten pool, which is recessed from the non-welded surface. Also, confining the overlap welding (stacked welding) to aluminum and aluminum alloy welding is acceptable. Moreover, the pressure is listed in two categories, the first category being a static pressure wherein the mounting stage is used and a dynamic pressure being the second category, wherein a gas nozzle is used in the open air. Additionally, the inert gas and the cooling enforced by the gas flow assist avoids contamination of the molten metal in the welding and reduces the projection of the beads. Finally, the motion of the shield gas nozzle is effective in keeping the flat submerged-scar due to the pressure against the beads and results in quick cooling of the molten metal so that the generation of beads is effectively suppressed.

Applicants respectfully note Banas fails to disclose or suggest disposing a second workpiece above or below the lone (i.e., single) workpiece (16) disposed between the clamp (22) and weld fixture (20). However, Applicants note Alips teaches placing first and second metal sheets (1 and 2) in an abutting relationship. See Figures 1-2 of Alips.

Claim 1 also recites supplying a shield gas to form an ambience over a submerged-scar projecting from a welding site defined on the second surface of the second welding base metal. Applicants respectfully note that Alips does not disclose or suggest a submerged-scar or any other such feature of the weld pools (18 and 19)

projecting from a lower surface of the metal sheet (2). Applicants further note Alips specifically discloses the metal sheet (2) has a coating layer (2) provided on the lower surface. Applicants note Banas appears to teach or at least suggest the metal melt (16) having a submerged-scar projecting from a lower surface of the lone workpiece (16). However, Applicants respectfully note Banas, while removing or limiting the amount of impurities at a weld site, does not appear to disclose or suggest the shield gas (36) pushing the scar projecting from the lower surface of the lone workpiece (16) wherein a vertical height of the scar is reduced.

To qualify as prior art under 35 USC § 102, a single reference must teach, i.e., identically describe, each feature of a rejected claim. As explained above, Banas and Alips, each reference taken alone, does not disclose or suggest each and every feature recited by Claim 1. Moreover, to establish *prima facie* obviousness, each and every feature of the rejected claim must be taught or suggested by the applied art of record. See M.P.E.P. §2143.03. As explained above, Banas and Alips, either alone or in combination, fail to teach or suggest each and every feature recited by Claim 1. Therefore, Applicants respectfully submit Banas and the applied Banas/Alips combination do not anticipate or render obvious the subject matter recited by Claim 1. Accordingly, Applicants respectfully submit Claim 1 should be deemed allowable over Banas and the Banas/Alips combination.

Claims 2-8 depend from Claim 1. It is respectfully submitted that these seven (7) dependent claims be deemed allowable for the same reasons Claim 1 is allowable, as well as for the additional subject matter recited therein.

Applicants respectfully request withdrawal of all three rejections.

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of Claims 1-8, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event that the filing of this paper is not deemed timely, Applicants petition for an appropriate extension of time. Any petition fee for the extension of time and any other fees that may be required in relation to this paper can be charged to Deposit Account No. 01-2300, **referencing Docket No. 106145-00068.**

Respectfully submitted,


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